

fact that the modification of the posterior air-sacs in *Plutalea* was carried out on *both* sides of the body perhaps shows it to be a characteristic of the bird.

*Alimentary Canal.*—The cæca of *Chauna chavaria* appear to differ slightly from those of *Chauna derbiana*, the most noticeable difference being that they are not symmetrical in the former species; the right cæcum is slightly longer than the left, and is of a uniform conical shape, tapering slightly to the free extremity; it measured  $3\frac{1}{2}$  inches from the tip to the junction with the ilium; the left cæcum measured as nearly as possible 3 inches. The left cæcum also differs in its shape, as may be seen by an inspection of the accompanying drawing (p. 180); its proximal half is about equal in diameter to that of the right cæcum, but instead of tapering gradually it narrows abruptly into the distal half, which is of about the thickness of the little finger.

In the *liver* the right lobe is larger than the left lobe, and, as in the other species, there is a large gall-bladder the duct of which opens into the duodenum below the hepatic duct; the pancreatic duct is the most anterior of the three.

*Trachea.*—The extrinsic muscles of the syrinx are somewhat differently disposed from those of *Chauna derbiana*; as in that species, there are two pairs; the most anterior spreads out in a fan-like manner upon a tough membrane which connects the coracoid and clavicle; this muscle is therefore attached exactly as is its homologue in *Ch. derbiana*. The posterior pair of muscles are, however, not attached to the costal process of the sternum as in *Ch. derbiana*, but terminate upon the aponeurosis of the lung just behind the exit of the pulmonary vein. The syrinx itself does not appear to me to be worth a special description or figure, as it agrees in every particular with that of *Ch. derbiana*.

2. On a Brachiopod of the Genus *Atretia*, named in MS. by the late Dr. T. Davidson. By Miss AGNES CRANE. (Communicated by Prof. W. H. Flower, LL.D., F.R.S.)

[Received March 15, 1886.]

In July last the late Dr. Thomas Davidson, F.R.S., received from Mr. John Brazier, of Sydney, a gift of an interesting series of Brachiopoda dredged by him in the waters of Port Stephens and Port Jackson, New South Wales. When, in January 1886, it became my duty to select the remaining specimens from the Davidson collection necessary for the illustration of Parts 2 and 3 of Dr. Davidson's forthcoming Monograph on Recent Brachiopoda, these Australian specimens were not found incorporated with his collection of living species. Possibly it was Dr. Davidson's intention to describe them in a separate paper. In February, when the collection of recent and fossil Brachiopoda (which, in accordance with Dr. Davidson's

desire, were presented to the nation) were removed to the Geological Department of the Natural History Branch of the British Museum at South Kensington, where he wished them to be deposited, Mr. Brazier's series was found apart from the recent specimens with the fossil collection. Each species had been placed in a separate box with a number inside, and this number was found to correspond with Mr. Brazier's list, which Dr. Davidson had copied into his letter-book with his remarks appended. The executor instructed me temporarily to retain the series for examination.

One very interesting new species of the remarkable genus *Atrétia* was discovered. This Dr. Davidson had named after his friend and correspondent Mr. John Brazier, of Sydney, who has dredged so extensively in Australian waters. The name *Atrétia brazieri* was attached in Dr. Davidson's handwriting. The specimens are so excellent that there can be no possibility of generic error on my part, and I have therefore thought it my duty to publish a short description of *Atrétia brazieri*, Dav., n. sp. MS., to secure priority for his last species, which should be figured in Part II. of the Davidson Monograph of Recent Brachiopoda which I am now engaged in editing for the Transactions of the Linnean Society.

*Atrétia*, as its name implies, is an imperforate genus. It may be as well briefly to recapitulate the history of the type species, first published by Dr. Gwyn Jeffreys under the name *Cryptopora gnomon* in 'Nature' for Dec. 1869. In the 'Ann. and Mag. Nat. Hist.' 1876, Jeffreys gave the earliest description of the species, substituting the generic name *Atrétia* for *Cryptopora*; Dr. Davidson gave the first figures in his Supplement to the "Recent and Tertiary British Brachiopoda" (Pal. Soc. 1874), and again illustrated the species in one of the two plates he contributed to Dr. Jeffreys's paper on "The Mollusca (Brachiopoda) of the 'Lightning' and 'Porcupine' Expeditions," published in the Proc. Zool. Soc., April 1878. *Atrétia gnomon* was dredged off the west coast of Ireland in from 1380-1443 fms.; during the 'Valorous' expedition, 1100-1750 fms., in Davis Straits. It was found by Dr. Friele (during the Norwegian Arctic expedition) about 30 miles W. of Tromsö, in 650 fms., "on the slope of the banks cold area." It was dredged off Marocco and the Canaries at depths of 50-65 fms., by the 'Talisman' and French expeditions. In all more than fifty examples of the European representative of this well-marked Rhynchonelloid have been obtained by Jeffreys, Friele, and the Marquis de Folin.

M. Eugène Deslongchamps, in his 'Etudes Critiques sur des Brachiopodes nouveaux ou peu connus,' p. 242 (Caen, 1884), expresses an opinion that *Atrétia gnomon*, Jeffr., is probably only a very young stage of *R. psittacea*, Chemn. But the recent discovery by Mr. Brazier of eleven good specimens of the genus *Atrétia* in the Southern Pacific Ocean, off the coast of New South Wales, tends to invalidate that assumption, the only *Rhynchonella* in the Australian and Novo-Zelandian region being the deeply ribbed or furrowed *Rh. nigricans* and its variety, *R. pyxidata*, Boog-Watson. To these well-characterized forms *Atrétia brazieri*, smooth, flat,

and compressed, bears no resemblance whatever, and exhibits at all ages definite generic characters<sup>1</sup>.

*ATRETIA BRAZIERI*, sp. nov.

*Description.*—This pretty little Brachiopod presents all the well-marked characteristics of the genus, two short curved slender processes, denticulated at their extremities, descend from the small narrow hinge-plate of the smaller dorsal valve, and an elevated wedge-shaped projection rises abruptly from the central mesial septum of the same valve. The presence of this septum is indicated by a dark line visible from the exterior of the shell. The shell is small, generally longer than wide, triangular in shape, especially in the younger specimens. Dorsal valve rounder and not so large as the ventral one, slightly flexuous towards the centre at the margins of the valves. The ventral valve, owing to the prolongation of the beak area, is longer and more triangular than the dorsal one raised towards the beak, which is slightly produced and incurved, with a triangular foramen commencing beneath its pointed extremity. Two elevated ridges extend from the shoulder of the shell nearly to the margins of the valves, and there seems to be a slight elevation corresponding with the well-marked exterior depression and surrounded by muscular scars (?) in the exteriors of the ventral valves of two specimens I have examined under magnifying-powers. The shell is shallow towards the margins, but rounded and deeper near the beak. Shell-substance imperforate; surface smooth, glossy, and gleaming, marked with fine concentric lines of growth; semitransparent. Horn-coloured or light grey.

Length  $2\frac{1}{4}$  lines; width  $1\frac{1}{2}$  line; depth about 1 line. Another specimen measured 2 lines in length by  $2\frac{1}{4}$  in width; this was more flattened and depressed, and the external mesial sinus in the ventral valve was less marked. Other specimens were about 1 line in length.

*Station and Depth.*—Eleven specimens and odd valves were dredged in twenty-five fathoms in sandy mud off Cabbage-Tree Island, Port Stephens, N.S.W., by Mr. John Brazier, who sent five specimens to Dr. Davidson, with the remark that they differed from all other known Brachiopoda from Australian waters.

*Obs.*—Dr. Davidson commemorated Mr. Brazier's discovery by naming the species after him, and I have deemed it my duty to my old and valued friend to describe the species under the name he desired to give it, as well as I am able. In so doing I wish to call the attention of qualified conchologists thereto, and to place on record the wide geographical distribution of the genus *Atretia*, which we now know to range in from 25–1750 fathoms, from nearly 70° N.

<sup>1</sup> NOTE.—I communicated the discovery of the Australian *Atretia* to the Norwegian naturalist, Herr Herman Fricke, who replied, April 19th, that my description of the skeleton of *A. brazieri* is quite typical of the genus *Atretia*, which he cannot consider to be the young of *Rhynchonella*. He adds the important fact that he obtained some fifty specimens of the *Atretia gnomon*. Jeffr., during the Norwegian North-Atlantic Expedition, but no *Rhynchonella* occurred on the same station or in corresponding depths.—AGNES CRANE, April 26th.

lat., in the Arctic Ocean to the Canaries in the South Atlantic, and as far as lat. 32° south of the Equator in the Southern Pacific Ocean. The specimens will eventually be placed in the Davidson Collection in the British Museum.

P.S.—Since my paper on *Atrertia brazieri* was written, I have submitted with my friend Mr. J. E. Haselwood, F. R. Micr. Soc., all the specimens of *Atrertia* to microscopic examination. Under a ten-inch power the beak-area deltidial plates present some immature features similar to those figured by Morse in his ‘Embryology of *Terebratulina*.’ The scaly structure of the shell is very apparent; there are no perforations. We observed two long slender narrow muscular scars, with a diamond-shaped central one in the interior of a ventral valve. The marginal borders of the largest specimen seemed raised or swollen. The most puzzling appearance occurs on some brown patches on the shell, consisting of circular and elongated sac-like aggregations. If these bodies are a feature of the *shell-structure*, it seems strange they should be visible in portions of the surface only<sup>1</sup>. I hope further to investigate the matter.

### 3. Observations on the Disposition of the Cubital Coverts in Birds. By J. G. GOODCHILD, F.Z.S., F.G.S., H.M. Geological Survey.

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The prominent position occupied by the cubital coverts in most living birds renders their correct delineation a point of so much importance in any figure intended for zoological purposes that it is perhaps hardly necessary to offer any apology for submitting a few observations upon that subject for the consideration of the Fellows of this Society. Both ornithologists and zoological artists have, of course, long been aware of the existence of considerable diversity both in the relative proportions and in the mode of arrangement of these feathers in various groups of birds; but it seems never to have occurred to any one that these variations are of such a nature as to admit of their being reduced to any system of classification. This oversight may be due to the fact that the specimens made use of for scientific purposes have necessarily been either spirit-specimens or else skins flat or mounted. In the case of the skins especially, such specimens cannot, as a rule, be at all depended upon as representing the natural order of the feathers in a living state; and consequently ornithologists have been led to believe that the subject under notice was not worth any serious attention. But a careful

<sup>1</sup> NOTE.—More prolonged examination by daylight with different powers showed these appearances to result from the partial overlapping of the cycloidal scales of the shell-structure. The presence of parallel rows of spicular projections was clearly revealed in the interior of the valves; these occur at regular distances from each other, running from the beak towards the margins of the valves.—AGNES CRANE, April 26th.